

Application No. 10/697,664
Amendment dated April 19, 2006
Reply to Office Action of October 20, 2005

REMARKS

Applicant cancelled claims 8-22 without prejudice or disclaimer of their subject matter, and added new claims 23-36 to further define Applicant's claimed invention.

In the Office Action, the Examiner rejected claims 1-7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,076,344 to Fields et al. The Examiner stated that Fields et al. substantially showed the invention as claimed and, in particular, directed the Applicant to see figure 8, the forward portion of the internal part which includes ball joint 160 being considered to be an adapter. Fields et al. discloses that the piston, or ram is preferably made of beryllium copper alloy. The Examiner asserts that it would have been obvious to make each part of the piston including the adapter with the same material.

Applicant submits that it would not have been obvious to one of ordinary skill in the art to make an adapter from beryllium copper alloy based on the teaching or suggestion of Fields et al. because an adapter as shown in figure 8 of Fields et al. is configured to swivel or pivot to allow the piston to follow the bore of the fill chamber. As such, Applicant respectfully submits that the adapter of Fields would encounter significant forces and pressures that would lead one to make the adapter out of a material such as forged steel.

Nonetheless, to expedite prosecution of the present application Applicant has amended claim 1 to recite that "said distal end of said adapter being open to form a portion of a cooling chamber and to permit the coolant to directly contact an interior surface of the plunger tip that forms a portion of the cooling chamber." The Fields et al. adapter of figure 8 is not open at its distal end; instead it assures "containment of the cooling fluid." (See Fields et al., col. 14, lines 3-10). Applicant submits that Fields et al. does not teach or suggest an adapter as recited in Applicant's claim 1.

New Independent claims 23 and 30 are similar to claim 1 as originally filed except that claim 23 also recites that "said adapter comprising a threaded distal end adapted to cooperatively engage the plunger tip to maintain said adapter and the plunger tip in fixed relationship to one another" and claim 30 recites "said adapter

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having a maximum cross-sectional dimension transverse to the length of said adapter, said distal end having a cross-sectional dimension transverse to the length of said adapter that is less than said maximum cross-sectional dimension, said distal end having a generally cylindrical cross section along at least a portion of the length." Applicant submits that Fields et al does not teach or suggest an adapter as recited in Applicant's claims 23 and 30.

Applicant submits that independent claims 1, 23, and 30 are patentable and that dependent claims 2-7, 24-29, and 31-36 dependent from independent claims 1, 23, or 30, or claims dependent therefrom, are patentable at least due to their dependency from an allowable independent claim.

In view of the foregoing remarks, it is respectfully submitted that the claims, as amended, are patentable. Therefore, it is requested that the Examiner reconsider the outstanding rejections in view of the preceding comments. Issuance of a timely Notice of Allowance of the claims is earnestly solicited.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this reply, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 50-1068.

Respectfully submitted,

MARTIN & FERRARO, LLP

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By: /Thomas H. Martin/
Thomas H. Martin
Registration No. 34,383

1557 Lake O'Pines Street, NE
Hartville, Ohio 44632
Telephone: (330) 877-0700
Facsimile: (330) 877-2030